

RAW SEQUENCE LISTING

**The Biotechnology Systems Branch of the Scientific and Technical
Information Center (STIC) no errors detected.**

Application Serial Number: 10/535,168
Source: JFWP
Date Processed by STIC: 10/13/2006

ENTERED

CRF Errors Edited by the STIC Systems Branch

Serial Number: 10/535, 168

CRF Edit Date: 10/13/2006
Edited by: DA

___ **Realigned nucleic acid/amino acid numbers/text in cases where the sequence text "wrapped" to the next line**

___ **Corrected the SEQ ID NO. Sequence numbers edited were:**

___ **Inserted or corrected a nucleic number at the end of a nucleic line. SEQ ID NO's edited:**

/ Deleted: invalid beginning/end-of-file text ; page numbers

___ **Inserted mandatory headings/numeric identifiers, specifically:**

___ **Moved responses to same line as heading/numeric identifier, specifically:**

___ **Other:**



IFWP

RAW SEQUENCE LISTING

DATE: 10/13/2006

PATENT APPLICATION: US/10/535,168

TIME: 15:08:05

Input Set: N:\DA\PTO.DA.txt

Output Set: N:\CRF4\10132006\J535168.raw

```

3 <110> APPLICANT: Chiron SRL
4      Norais, Nathalie
5      Grandi, Guido
7 <120> TITLE OF INVENTION: Unexpected Meningococcus Surface Proteins
9 <130> FILE REFERENCE: P032364WO
C--> 11 <140> CURRENT APPLICATION NUMBER: US/10/535,168
C--> 12 <141> CURRENT FILING DATE: 2005-05-16
14 <150> PRIOR APPLICATION NUMBER: GB0226734.2
15 <151> PRIOR FILING DATE: 2002-11-15
17 <150> PRIOR APPLICATION NUMBER: GB0307131.3
18 <151> PRIOR FILING DATE: 2003-03-27
20 <160> NUMBER OF SEQ ID NOS: 217
22 <170> SOFTWARE: SeqWin99, version 1.02
24 <210> SEQ ID NO: 1
25 <211> LENGTH: 403
26 <212> TYPE: PRT
27 <213> ORGANISM: Neisseria meningitidis
29 <400> SEQUENCE: 1
30 Met Ala Phe Leu Lys Leu Thr Glu Gln Asn Val Gln Gly Lys Thr Val
31 1      5      10      15
33 Leu Ile Arg Ala Asp Met Asn Val Pro Phe Lys Asp Gly Lys Ile Ser
34      20      25      30
36 Asp Asp Thr Arg Ile Arg Ala Ser Leu Ala Ser Ile Lys Tyr Cys Val
37      35      40      45
39 Asp Asn Gly Ala Ser Val Ile Val Met Thr His Leu Gly Arg Pro Thr
40      50      55      60
42 Glu Gly Glu Phe His Pro Glu Asp Asp Val Ala Pro Val Ala Ala His
43 65      70      75      80
45 Leu Gly Ser Leu Leu Gly Lys Asp Val Lys Val Leu Asn Asp Trp Arg
46      85      90      95
48 Glu Asn Lys Pro Ala Leu Asn Ala Gly Asp Val Val Met Leu Gln Asn
49      100     105     110
51 Val Arg Ile Asn Lys Gly Glu Lys Lys Asn Asp Leu Glu Leu Gly Lys
52      115     120     125
54 Ala Tyr Ala Ser Leu Cys Asp Val Phe Val Asn Asp Ala Phe Gly Thr
55      130     135     140
57 Ala His Arg Ala Gln Ala Ser Thr Glu Ala Val Ala Gln Ala Ala Pro
58 145     150     155     160
60 Val Ala Cys Ala Gly Val Leu Met Ala Gly Glu Leu Asp Ala Leu Gly
61      165     170     175
63 Lys Ala Leu Lys Gln Pro Ala Arg Pro Met Val Ala Ile Val Ala Gly
64      180     185     190
66 Ser Lys Val Ser Thr Lys Leu Thr Ile Leu Glu Ser Leu Ala Asp Lys

```

RAW SEQUENCE LISTING

DATE: 10/13/2006

PATENT APPLICATION: US/10/535,168

TIME: 15:08:05

Input Set : N:\DA\PTO.DA.txt

Output Set: N:\CRF4\10132006\J535168.raw

```

67          195          200          205
69 Val Asp Gln Leu Ile Val Gly Gly Gly Ile Ala Asn Thr Phe Leu Leu
70          210          215          220
72 Ala Glu Gly Lys Ala Ile Gly Lys Ser Leu Ala Glu His Asp Leu Val
73 225          230          235          240
75 Glu Glu Ser Lys Lys Ile Met Ala Lys Met Ala Ala Lys Gly Gly Ser
76          245          250          255
78 Val Pro Leu Pro Thr Asp Val Val Val Ala Lys Ala Phe Ala Ala Asp
79          260          265          270
81 Ala Glu Ala Val Val Lys Asp Ile Ala Ala Asp Ala Glu Ala Val Val
82          275          280          285
84 Lys Asp Ile Ala Asp Val Ala Glu Asp Glu Met Ile Leu Asp Ile Gly
85          290          295          300
87 Pro Lys Ser Ala Ala Ala Leu Ala Asp Leu Leu Lys Ala Ala Gly Thr
88 305          310          315          320
90 Val Val Trp Asn Gly Pro Val Gly Val Phe Glu Phe Asp Gln Phe Ala
91          325          330          335
93 Gly Gly Thr Lys Ala Leu Ala Glu Ala Ile Ala Gln Ser Lys Ala Phe
94          340          345          350
96 Ser Ile Ala Gly Gly Gly Asp Thr Leu Ala Ala Ile Ala Lys Phe Gly
97          355          360          365
99 Val Thr Glu Gln Ile Gly Tyr Ile Ser Thr Gly Gly Gly Ala Phe Leu
100          370          375          380
102 Glu Phe Leu Glu Gly Lys Glu Leu Pro Ala Val Ala Ala Leu Glu Lys
103 385          390          395          400
105 Arg Gly Ala
108 <210> SEQ ID NO: 2
109 <211> LENGTH: 170
110 <212> TYPE: PRT
111 <213> ORGANISM: Neisseria meningitidis
113 <400> SEQUENCE: 2
114 Met Asn Thr Leu Gln Lys Gly Phe Thr Leu Ile Glu Leu Met Ile Val
115 1          5          10          15
117 Ile Ala Ile Val Gly Ile Leu Ala Ala Val Ala Leu Pro Ala Tyr Gln
118          20          25          30
120 Asp Tyr Thr Ala Arg Ala Gln Val Ser Glu Ala Ile Leu Leu Ala Glu
121          35          40          45
123 Gly Gln Lys Ser Ala Val Thr Glu Tyr Tyr Leu Asn His Gly Glu Trp
124          50          55          60
126 Pro Gly Asn Asn Thr Ser Ala Gly Val Ala Thr Ser Ser Glu Ile Lys
127 65          70          75          80
129 Gly Lys Tyr Val Lys Ser Val Glu Val Lys Asn Gly Val Val Thr Ala
130          85          90          95
132 Gln Met Ala Ser Ser Asn Val Asn Asn Glu Ile Lys Gly Lys Lys Leu
133          100          105          110
135 Ser Leu Trp Ala Lys Arg Gln Asn Gly Ser Val Lys Trp Phe Cys Gly
136          115          120          125
138 Gln Pro Val Thr Arg Asp Lys Ala Lys Ala Ala Asn Asp Asp Val Thr
139          130          135          140

```

RAW SEQUENCE LISTING

DATE: 10/13/2006

PATENT APPLICATION: US/10/535,168

TIME: 15:08:05

Input Set : N:\DA\PTO.DA.txt

Output Set: N:\CRF4\10132006\J535168.raw

```

141 Ala Ala Ala Ala Ala Asn Gly Lys Lys Ile Asp Thr Lys His Leu Pro
142 145                      150                      155                      160
144 Ser Thr Cys Arg Asp Ala Ser Asp Ala Ser
145                      165                      170
147 <210> SEQ ID NO: 3
148 <211> LENGTH: 685
149 <212> TYPE: PRT
150 <213> ORGANISM: Neisseria meningitidis
152 <400> SEQUENCE: 3
153 Met Thr Arg Lys Ile Leu Val Thr Ser Ala Leu Pro Tyr Ala Asn Gly
154 1                      5                      10                      15
156 Ser Ile His Leu Gly His Met Val Glu His Ile Gln Thr Asp Val Trp
157                      20                      25                      30
159 Val Arg Phe Gln Lys Leu Arg Gly His Ala Cys His Tyr Cys Cys Ala
160                      35                      40                      45
162 Asp Asp Thr His Gly Thr Pro Val Met Leu Ala Ala Gln Lys Gln Gly
163                      50                      55                      60
165 Ile Ala Pro Glu Asp Met Ile Ala Lys Val Arg Glu Glu His Leu Ala
166 65                      70                      75                      80
168 Asp Phe Thr Gly Phe Phe Ile Gly Tyr Asp Asn Tyr Tyr Ser Thr His
169                      85                      90                      95
171 Ser Pro Glu Asn Lys Gln Phe Ser Gln Asp Ile Tyr Arg Ala Leu Lys
172                      100                     105                     110
174 Ala Asn Gly Lys Ile Glu Ser Arg Val Ile Glu Gln Leu Phe Asp Pro
175                      115                     120                     125
177 Glu Lys Gln Met Phe Leu Pro Asp Arg Phe Val Lys Gly Glu Cys Pro
178                      130                     135                     140
180 Lys Cys His Ala Gln Asp Gln Tyr Gly Asp Asn Cys Glu Val Cys Gly
181 145                      150                      155                      160
183 Thr Thr Tyr Ser Pro Thr Glu Leu Ile Asn Pro Tyr Ser Ala Val Ser
184                      165                      170                      175
186 Gly Thr Lys Pro Glu Leu Arg Glu Ser Glu His Phe Phe Phe Lys Leu
187                      180                      185                      190
189 Gly Glu Cys Ala Asp Phe Leu Lys Ala Trp Thr Ser Gly Asn Asn Pro
190                      195                     200                     205
192 His Asp Gly Lys Pro His Leu Gln Ala Glu Ala Leu Asn Lys Met Lys
193                      210                     215                     220
195 Glu Trp Leu Gly Glu Gly Glu Glu Thr Thr Leu Ser Asp Trp Asp Ile
196 225                      230                      235                      240
198 Ser Arg Asp Ala Pro Tyr Phe Gly Phe Glu Ile Pro Asp Ala Pro Gly
199                      245                     250                     255
201 Lys Tyr Phe Tyr Val Trp Leu Asp Ala Pro Val Gly Tyr Met Ala Ser
202                      260                     265                     270
204 Phe Lys Asn Leu Cys Asp Arg Ile Gly Val Asp Phe Asp Glu Tyr Phe
205                      275                     280                     285
207 Lys Ala Asp Ser Gln Thr Glu Met Tyr His Phe Ile Gly Lys Asp Ile
208                      290                     295                     300
210 Leu Tyr Phe His Ala Leu Phe Trp Pro Ala Met Leu His Phe Ser Gly
211 305                      310                      315                      320

```

RAW SEQUENCE LISTING

DATE: 10/13/2006

PATENT APPLICATION: US/10/535,168

TIME: 15:08:05

Input Set : N:\DA\PTO.DA.txt

Output Set: N:\CRF4\10132006\J535168.raw

```

213 His Arg Ala Pro Thr Gly Val Tyr Ala His Gly Phe Leu Thr Val Asp
214           325           330           335
216 Gly Gln Lys Met Ser Lys Ser Arg Gly Thr Phe Ile Thr Ala Lys Ser
217           340           345           350
219 Tyr Leu Glu Gln Gly Leu Asn Pro Glu Trp Met Arg Tyr Tyr Ile Ala
220           355           360           365
222 Ala Lys Leu Asn Ser Lys Ile Glu Asp Ile Asp Leu Asn Leu Gln Asp
223           370           375           380
225 Phe Ile Ser Arg Val Asn Ser Asp Leu Val Gly Lys Tyr Val Asn Ile
226 385           390           395           400
228 Ala Ala Arg Ala Ser Gly Phe Ile Ala Lys Arg Phe Glu Gly Arg Leu
229           405           410           415
231 Lys Asp Val Ala Asp Ser Glu Leu Leu Ala Lys Leu Thr Ala Gln Ser
232           420           425           430
234 Glu Ala Ile Ala Glu Cys Tyr Glu Ser Arg Glu Tyr Ala Lys Ala Leu
235           435           440           445
237 Arg Asp Ile Met Ala Leu Ala Asp Ile Val Asn Glu Tyr Val Asp Ala
238 450           455           460
240 Asn Lys Pro Trp Glu Leu Ala Lys Gln Glu Gly Gln Asp Glu Arg Leu
241 465           470           475           480
243 His Glu Val Cys Ser Glu Leu Ile Asn Ala Phe Thr Met Leu Thr Ala
244           485           490           495
246 Tyr Leu Ala Pro Val Leu Pro Gln Thr Ala Ala Asn Ala Ala Lys Phe
247           500           505           510
249 Leu Asn Leu Glu Ala Ile Thr Trp Ala Asn Thr Arg Asp Thr Leu Gly
250           515           520           525
252 Lys His Ala Ile Asn Lys Tyr Glu His Leu Met Gln Arg Val Glu Gln
253 530           535           540
255 Lys Gln Val Asp Asp Leu Ile Glu Ala Asn Lys Gln Ser Ile Ala Ala
256 545           550           555           560
258 Ala Ala Ala Pro Ala Ala Glu Glu Gly Lys Tyr Glu Lys Val Ala Glu
259           565           570           575
261 Gln Ala Ser Phe Asp Asp Phe Met Lys Ile Asp Met Arg Val Ala Lys
262           580           585           590
264 Val Leu Asn Cys Glu Ala Val Glu Gly Ser Thr Lys Leu Leu Lys Phe
265           595           600           605
267 Asp Leu Asp Phe Gly Phe Glu Lys Arg Ile Ile Phe Ser Gly Ile Ala
268 610           615           620
270 Ala Ser Tyr Pro Asn Pro Ala Glu Leu Asn Gly Arg Met Val Ile Ala
271 625           630           635           640
273 Val Ala Asn Phe Ala Pro Arg Lys Met Ala Lys Phe Gly Val Ser Glu
274           645           650           655
276 Gly Met Ile Leu Ser Ala Ala Thr Ala Asp Gly Lys Leu Lys Leu Leu
277           660           665           670
279 Asp Val Asp Thr Gly Ala Gln Pro Gly Asp Lys Val Gly
280 675           680           685
282 <210> SEQ ID NO: 4
283 <211> LENGTH: 456
284 <212> TYPE: PRT

```

RAW SEQUENCE LISTING

DATE: 10/13/2006

PATENT APPLICATION: US/10/535,168

TIME: 15:08:05

Input Set : N:\DA\PTO.DA.txt

Output Set: N:\CRF4\10132006\J535168.raw

285 <213> ORGANISM: Neisseria meningitidis

287 <400> SEQUENCE: 4

```

288 Met Pro Gln Asn Thr Leu Asn Ile Val Ile Leu Ala Ala Gly Lys Gly
289 1 5 10 15
291 Thr Arg Met Tyr Ser Lys Met Pro Lys Val Leu His Arg Ile Gly Gly
292 20 25 30
294 Lys Pro Met Val Gly Arg Val Ile Asp Thr Ala Ala Ala Leu Asn Pro
295 35 40 45
297 Gln Asn Ile Cys Val Val Ile Gly His Gly Lys Glu Gln Val Leu Asp
298 50 55 60
300 Thr Val Lys Arg Asp Val Val Trp Val Glu Gln Thr Glu Gln Leu Gly
301 65 70 75 80
303 Thr Gly His Ala Val Lys Thr Ala Leu Pro His Leu Ser Ala Glu Gly
304 85 90 95
306 Arg Thr Leu Val Leu Tyr Gly Asp Val Pro Leu Ile Asp Val Glu Thr
307 100 105 110
309 Leu Glu Thr Leu Leu Glu Ala Ala Gly Asn Glu Val Gly Leu Leu Thr
310 115 120 125
312 Asp Val Pro Asn Asp Pro Thr Gly Leu Gly Arg Ile Ile Arg Asp Ser
313 130 135 140
315 Asn Gly Ser Val Thr Ala Ile Val Glu Glu Lys Asp Ala Asp Ala Val
316 145 150 155 160
318 Gln Lys Ala Val Lys Glu Ile Asn Thr Gly Ile Leu Val Leu Pro Asn
319 165 170 175
321 Ala Lys Leu Glu Asn Trp Leu Asn Ser Leu Ser Ser Asn Asn Ala Gln
322 180 185 190
324 Gly Glu Tyr Tyr Leu Thr Asp Leu Ile Ala Lys Ala Val Ala Asp Gly
325 195 200 205
327 Ile Lys Val His Pro Val Gln Val Arg Ala Ser His Leu Ala Ala Gly
328 210 215 220
330 Val Asn Asn Lys Leu Gln Leu Thr Glu Leu Glu Arg Ile Phe Gln Thr
331 225 230 235 240
333 Glu Gln Ala Gln Glu Leu Leu Lys Ala Gly Val Thr Leu Arg Asp Pro
334 245 250 255
336 Ala Arg Phe Asp Leu Arg Gly Arg Leu Lys His Gly Gln Asp Val Val
337 260 265 270
339 Ile Asp Val Asn Cys Ile Phe Glu Gly Asp Ile Glu Leu Gly Asp Asn
340 275 280 285
342 Val Glu Ile Gly Ala Asn Cys Val Ile Lys Asn Ala Lys Ile Gly Ala
343 290 295 300
345 Asn Ser Lys Ile Ala Pro Phe Ser His Leu Glu Ser Cys Glu Val Gly
346 305 310 315 320
348 Glu Asn Asn Arg Ile Gly Pro Tyr Ala Arg Leu Arg Pro Gln Ala Arg
349 325 330 335
351 Leu Ala Asp Asp Val His Val Gly Asn Phe Val Glu Ile Lys Asn Ala
352 340 345 350
354 Ala Ile Gly Lys Gly Thr Lys Ala Asn His Leu Thr Tyr Ile Gly Asp
355 355 360 365
357 Ala Glu Val Gly Cys Lys Thr Asn Phe Gly Ala Gly Thr Ile Ile Ala

```

VERIFICATION SUMMARY

DATE: 10/13/2006

PATENT APPLICATION: US/10/535,168

TIME: 15:08:06

Input Set : N:\DA\PTO.DA.txt

Output Set: N:\CRF4\10132006\J535168.raw

L:11 M:270 C: Current Application Number differs, Replaced Current Application Number

L:12 M:271 C: Current Filing Date differs, Replaced Current Filing Date

**Raw Sequence Listing before editing,
for reference only**



IFWP

RAW SEQUENCE LISTING

DATE: 10/10/2006

PATENT APPLICATION: US/10/535,168

TIME: 14:21:44

Input Set : E:\sequence listing1.TXT

Output Set: N:\CRF4\10102006\J535168.raw

3 <110> APPLICANT: Chiron SRL
 4 Norais, Nathalie
 5 Grandi, Guido
 7 <120> TITLE OF INVENTION: Unexpected Meningococcus Surface Proteins
 9 <130> FILE REFERENCE: P032364WO
 C--> 11 <140> CURRENT APPLICATION NUMBER: US/10/535,168
 C--> 12 <141> CURRENT FILING DATE: 2005-05-16
 14 <150> PRIOR APPLICATION NUMBER: GB0226734.2
 15 <151> PRIOR FILING DATE: 2002-11-15
 17 <150> PRIOR APPLICATION NUMBER: GB0307131.3
 18 <151> PRIOR FILING DATE: 2003-03-27
 20 <160> NUMBER OF SEQ ID NOS: 217
 22 <170> SOFTWARE: SeqWin99, version 1.02

Does Not Comply
Corrected Diskette Needed

(pg-2)

ERRORED SEQUENCES

18101 <210> SEQ ID NO: 217
 18102 <211> LENGTH: 371
 18103 <212> TYPE: PRT
 18104 <213> ORGANISM: Neisseria meningitidis
 18106 <400> SEQUENCE: 217
 18107 Met Arg Leu Phe Lys Ser Leu Lys Asn Pro Lys Lys Thr Asp Ala Lys
 18108 1 5 10 15
 18110 Leu Pro Lys Lys Ser Ser Gly Leu Asn Asn Arg Ala Ala Ile Gly Ile
 18111 20 25 30
 18113 Asp Ile Asp Gln His Ser Ile Lys Met Val Gln Leu Ser Gly Arg Ser
 18114 35 40 45
 18116 Leu Asn Gln Ile Gln Leu Glu Lys Tyr Val Ile Ala Lys Leu Pro Lys
 18117 50 55 60
 18119 Asn Ile Ile Gln Gly Asn Lys Val Gln Asn Tyr Asp Gln Leu Val Thr
 18120 65 70 75 80
 18122 Tyr Leu Gln Gln Ala Tyr Ala Lys Leu Gly Thr Ser Cys Lys Asn Ile
 18123 85 90 95
 18125 Ile Ala Ser Val Pro Gln Asn Leu Ala Thr Ile Glu Gln Leu Thr Tyr
 18126 100 105 110
 18128 Thr Asp Lys Asp Ala Glu Leu Asp Leu Gln Gly Phe Val Glu Ser Ser
 18129 115 120 125
 18131 Ile Ser Glu Val Ser Ser Ile Ser Leu Glu Glu Ala Asn Tyr Asp Tyr
 18132 130 135 140
 18134 Gln Val Leu Ser Gln Ser Ala Ala Gly Glu Ala Val Leu Ala Val Ala
 18135 145 150 155 160
 18137 Ser Arg Lys Asp Glu Ile Glu Pro Leu Ile Asp Ala Phe Asn Ala Ala

RAW SEQUENCE LISTING

DATE: 10/10/2006

PATENT APPLICATION: US/10/535,168

TIME: 14:21:45

Input Set : E:\sequence listing1.TXT

Output Set: N:\CRF4\10102006\J535168.raw

```

18138          165          170          175
18140 Gly Met Lys Leu Ser Ala Leu Asp Val Asp Ile Phe Gly Gln Tyr Asn
18141          180          185          190
18143 Ala Tyr Ala Leu Trp Ile Asn His Phe Ala Pro Glu Leu Ala Ala Glu
18144          195          200          205
18146 Lys Val Ala Ile Phe Gly Val Tyr Ala Ala Gln Thr Tyr Ala Leu Val
18147          210          215          220
18149 Ile Gln Asp Gly Lys Ile Leu Tyr Lys Gln Glu Thr Ser Val Ser Glu
18150 225          230          235          240
18152 Glu Gln Leu Asn Gln Leu Ile Gln Arg Thr Tyr Gln Val Thr Glu Glu
18153          245          250          255
18155 Lys Ala Glu Glu Ile Ile Asn Ser Pro Gln Lys Pro Ser Asp Tyr Gln
18156          260          265          270
18158 Glu Ser Val Ala Asn Tyr Phe Asn Gln Gln Ile Thr Gln Glu Ile Gln
18159          275          280          285
18161 Arg Val Leu Gln Phe Tyr Tyr Thr Thr Gln Thr Ala Asp Asp Met Thr
18162          290          295          300
18164 Asp Ile Lys His Ile Leu Leu Thr Gly Glu Ala Ala Arg Gln Glu Gly
18165 305          310          315          320
18167 Ile Ala Gln Thr Val Ala Ser Gln Thr Asn Ala Asp Val Gln Cys Val
18168          325          330          335
18170 His Pro Ala Arg Tyr Phe Ala Asp Asn Leu Lys Thr Asp Lys Gln Gln
18171          340          345          350
18173 Phe Glu Leu Asp Ala Pro Thr Leu Thr Arg Ala Phe Gly Leu Ala Val
18174          355          360          365
18176 Arg Gly Leu
18177          370

```

E--> 18179

(1)

deleted

VERIFICATION SUMMARY

PATENT APPLICATION: US/10/535,168

DATE: 10/10/2006

TIME: 14:21:46

Input Set : E:\sequence listing1.TXT

Output Set: N:\CRF4\10102006\J535168.raw

L:11 M:270 C: Current Application Number differs, Replaced Current Application Number

L:12 M:271 C: Current Filing Date differs, Replaced Current Filing Date

L:18179 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:217